

WHAT IS CLAIMED IS:

1. An electron beam apparatus comprising an electron source having electron beam emitting devices, an electrode for controlling electrons emitted from said electron source and members arranged between said electron source and said electrode, wherein
5 said members have:
a high resistance film formed on the surface; and
at least a low resistance layer formed on the side
10 facing said electrode or said electron source;
said high resistance film being electrically
connected to either said electrode or said electron
source by way of said low resistance layer, said low
resistance layer being covered at least partly by said
15 high resistance film.
2. An electron beam apparatus according to claim 1, wherein said low resistance layer is covered by said high resistance film in a boundary area held in
20 connection with said high resistance film.
3. An electron beam apparatus according to claim 1, wherein said low resistance layer is covered by said high resistance film in an area exposed to ambient air.
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4. An electron beam apparatus according to claim

1, wherein said low resistance layer is entirely covered by said high resistance film.

5 5. An electron beam apparatus according to claim 1, wherein said members have said low resistance layer and said high resistance film sequentially formed in the mentioned order.

10 6. An electron beam apparatus according to claim 1, wherein said low resistance layer is arranged on the end face of said members facing either said electrode or said electron source and extending to the lateral sides thereof and the extended portion of said low resistance layer is covered by said high resistance
15 film at least at the extreme ends thereof.

20 7. An electron beam apparatus according to claim 1, wherein said high resistance film may be arranged to cover said low resistance layer at least on the end face facing said electrode or said electron source.

25 8. An electron beam apparatus according to claim 1, wherein said low resistance layer is covered by said high resistance film at least in part of the area exposed to ambient air.

9. An electron beam apparatus according to claim

1, wherein said electron source has a plurality of electron-emitting devices connected by wires and said members are electrically connected to said wires.

5 10. An electron beam apparatus according to claim 1, wherein said electron source has a plurality of electron-emitting devices connected to form a matrix-wiring arrangement by means of a plurality of row-directional wires and a plurality of
10 column-directional wires electrically insulated from said plurality of row-directional wires.

 11. An electron beam apparatus according to claim 1, wherein said electrode is an acceleration electrode
15 for accelerating electrons emitted from said electron source.

 12. An electron beam apparatus according to claim 1, wherein said electron-emitting devices are surface
20 conduction electron-emitting devices.

 13. An electron beam apparatus according to claim 1, wherein said members are spacers.

25 14. An electron beam apparatus according to claim 1, wherein said electron source has a plurality of electron-emitting devices.

15. An electron beam apparatus comprising an
electron source having electron beam emitting devices,
an electrode separated from said electron source and
members arranged between said electron source and said
5 electrode, wherein

said members include:

a film arranged on the surface and adapted to
allow a minute electric current to flow therethrough;
and

10 an end electrode arranged at least at the end
facing said electron source or said electrode, said
film covering at least part of said end electrode.

16. An electron beam apparatus according to claim
15, wherein said end electrode is covered by said film
at least in the area connected to said film.

17. An electron beam apparatus according to claim
15, wherein said end electrode is covered by said film
20 in an area exposed to ambient air.

18. An electron beam apparatus according to claim
15, wherein said end electrode is covered by said film
in part of an area exposed to ambient air.

25 19. An electron beam apparatus according to claim
15, wherein said end electrode is entirely covered by

said film.

20. An electron beam apparatus according to claim
15, wherein said members have said end electrode and
5 said film sequentially formed in the mentioned order.

21. An electron beam apparatus according to claim
15, wherein said end electrode is arranged on the end
face of said members facing either said electrode or
10 said electron source and extending to the lateral sides
thereof and the extended portion of said end electrode
is covered by said film at least at the extreme ends
thereof.

15 22. An electron beam apparatus according to claim
15, wherein said film is arranged to cover said end
electrode at least on the end face facing said
electrode or said electron source.

20 23. An electron beam apparatus according to claim
15, wherein said electron source has a plurality of
electron-emitting devices connected by wires and said
members are electrically connected to said wires.

25 24. An electron beam apparatus according to claim
15, wherein said electron source has a plurality of
electron-emitting devices connected to form a matrix-

wiring arrangement by means of a plurality of
row-directional wires and a plurality of
column-directional wires electrically insulated from
said plurality of row-directional wires.

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25. An electron beam apparatus according to claim
15, wherein said electrode is an acceleration electrode
for accelerating electrons emitted from said electron
source.

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26. An electron beam apparatus according to claim
15, wherein said electron-emitting devices are surface
conduction electron-emitting devices.

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27. An electron beam apparatus according to claim
15, wherein said members are spacers.

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28. An electron beam apparatus according to claim
15, wherein said electron source has a plurality of
electron-emitting devices.

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29. An image-forming apparatus comprising an
electron beam apparatus according to claim 1, wherein
an image is formed by irradiating a target with
electrons emitted from said electron-emitting devices.

30. An image-forming apparatus according to claim

29, wherein said target comprises fluorescent bodies.

31. An image-forming apparatus comprising an
electron beam apparatus according to claim 24, wherein
5 an image is formed by irradiating a target with
electrons emitted from said electron-emitting devices.

32. An image-forming apparatus according to claim
31, wherein said target comprises fluorescent bodies.
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33. A method of manufacturing a member to be used
in an electron beam apparatus having an electron source
and an electrode separated from said electron source,
said member being adapted to be arranged between said
15 electron source and said electrode, said member having
a low resistance layer arranged at least on the side
facing said electrode or said electron source and a
high resistance film electrically connected to the low
resistance layer, said method comprising:
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a step of forming said high resistance film to
cover at least part of said low resistance layer.

34. A method of manufacturing a member according
to claim 33, wherein, in the step of forming said high
25 resistance film, said high resistance film is formed on
said low resistance layer at least on the side facing
said electrode or said electron source of the member

and, at the same time, on the sides other than the side facing said electron source or said electrode to facilitate the manufacture of the member.

5 35. A method of manufacturing a member to be used
in an electron beam apparatus having an electron source
and an electrode separated from said electron source,
said member being adapted to be arranged between said
electron source and said electrode, said member having
10 an end electrode arranged at least on the side facing
said electron source or said electrode and a film
electrically connected to the end electrode, said
method comprising:

15 a step of forming said film to cover at least part
of said end electrode.

20 36. A method of manufacturing a member according
to claim 35, wherein, in the step of forming said film,
said film is formed at least on the side facing said
electron source or said electrode and, at the same
time, on the sides other than the side facing said
electron source or said electrode to facilitate the
manufacture of the member.